

AVIATION

The Oldest American Aeronautical Magazine

JULY 26, 1926

Issued Weekly

PRICE 15 CENTS



An Irvin Parachute in Use by the Navy

VOLUME
XXI

SPECIAL FEATURES

NUMBER
4

AIRPLANE ARRESTORS AND CATAPULTS

FRENCH CIVIL AVIATION

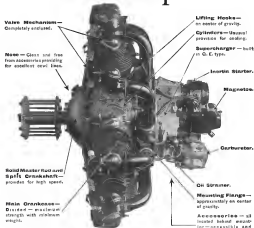
THE LAIRD COMMERCIAL

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HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK

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under Act of March 3, 1879.

Exclusive Reasons for Leadership



The "Wasp"

THE
PRATT & WHITNEY AIRCRAFT CO.
HARTFORD CONNECTICUT



LANDING FACILITIES

MUNICIPAL FIELD AND CONNECTICUT RIVER

ON AIRWAYS MAPS

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JULY 26, 1926

AVIATION

VOL. XXII NO. 4

Published every Monday

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The Wright Cyclone 9 cyl., 415 hp. air cooled radial engine of 1657 cu. in. with a bore of 6 in. and stroke of 5 1/2 in., developed for the U. S. Navy. Ignition is supplied by two Type AG 50 SCINTILLA Aircraft Magneto.

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pole at the outer end, tension rods or cables connecting the pole to the engine support and a light cable or cable running from the pole to the pilot's seat to allow raising and lowering the pole, as desired.

An engine compartment as described in the neighborhood of three and one-half times that of gravity, when in a light speed, and most places are constructed strongly enough to withstand this. It would, therefore, seem that no additional strengthening would be necessary, since considerations of more than one half the above amount are not required.

Other Uses

As long as engines are built to deliver safety in flying with extra weight to a landing field at all times during flight. The same fields then are available, the after flying will be the same route following the greatest safety will be possible. It is estimated that the cost of a plane of this type is about \$100,000 to have at least one engine 2,000 ft. in length. If this distance could be cut to one-half, without sacrificing safety and without disproportionate expense, the saving in cost would make such a plane feasible for the same amount of money. It is to be noticed that savings will be made in the cost of preparation of the surface, lighting and repairs, as well as initial repairs, etc. If some simple means of stretching and bending has been suggested previously developed, then these things will be possible at moderate expense. Both a development would also make emergency fields possible on mountain ranges and at other points where sufficient land on the level is not available for the present road emergency field.

Other possible uses for airplanes and airports seem to be further in the future and they may be as follows: (1) As a transport airplane service to and from ships on the high seas would, of course, be a convenience, although probably costly. It is also possible that landing platforms may be anchored in a stable ocean, the Atlantic for example, to transport ships. Such platforms can be built with horizontal masts or surfaces below the depth of wave action and, thereby, rendered practically stable.

It should be remembered that, while completely long emergency fields may be made, the probable operation of emergency airports in landing is relatively short stop-ship fields, since the great weight of the emergency field is a disadvantage. It is possible that the emergency field is a disadvantage. At present this landing device would appear to be the replacement of the landing surface. It may, of course, be possible to refuel while in flight, but it seems more likely that if the Atlantic, or other oceans, are eventually crossed by commercial airplane routes, some provision for landing at intermediate stations will be made.

The Development of Devices

The Government is best fitted to carry on the work of developing, testing, and evaluating devices and equipment. It is possible that, if the provision of the emergency fields similar to those provided for ships at sea and on the great lakes is undertaken by the Government, the development of the means for raising and lowering emergency fields within a more convenient area may be considered a proper government function. It would also seem that the development of the means of carrying out the emergency fields is a matter for the Army. Airplanes and airports will be designed for transportation in motor trucks which would allow the establishment of temporary or advanced fields where the nature of the field did not permit a large field. Such a facility might be very valuable in war.

In case the Government definitely refused to consider such a development as a proper function, it is possible that private funds available for the development of the means of raising and lowering emergency fields might undertake the work, provided there is a sufficiently convincing argument in favor of the value to civil aviation.

Under the two conditions, the work of development will probably be very slow in getting started. The airplane manufacturing and air transport concerns, who have funds available to carry out the development, are fully aware of the fact that there are many more difficulties and which are possible for more immediate solution. Eventually, the development would be undertaken by one of these, as several have

undertaken an airplane along this line. Provision by such an agency might be satisfactory, as if the work were carried in order to keep down expense and if landings or landings were attempted without sufficient study, experiment and other means, serious accidents would be likely to result. A land accident might give the project a "black eye" from which the recovery would be slow and might result in a set back to commercial aviation.

Method of Development

On the other hand, the project, successfully carried out and installed on a working scale, would have an immediate effect on public opinion as serving to demonstrate an increased advantage in air transport and greater future possibilities. The United States Navy and army aviation power in experimenting with and developing the aircraft and its uses in developing emergency, landing, by the use of the emergency field, further along, the air has not any other country. It would seem unlikely that any method differing very widely from those and by the Navy would be found best for land use, considering the degree of success the Navy has achieved.

The proper policy in undertaking the development of devices for use when used must be to be the following: (1) Study the device and the benefits of past experiments with such devices; (2) Lay out a program of experiments to test the various conditions which offer, limiting each experiment, so far as possible, to the test of one more than one or feature of the proposed device; (3) When the experiments are made, have submitted, as clearly as possible, the best device for use, then build a complete gear; (4) Test the completed device on the ground with all necessary precautions; (5) When the device is built, have built, as clearly as possible, on the ground and all necessary situations made, install it on the roof of a building or other elevated platform; (6) Before the use of the apparatus under its emergency landing conditions while under control, observed for about a year before any other modifications are attempted. The work should go very slowly at the start and at very moderate expense until the uncertainties have been well worked out.

Need for Experimental Work

It is true that there is an pressing need for such devices in emergency situations and probably in the future and be for several years to come. As soon as air transport assumes the status of an industry, however, these devices or means to serve the more persons, will be greatly needed. The standard outlined above will have some value to the pilot. It would be well to have one or two experimental landings working for some time in advance of any extensive use. These things may be taken into consideration while developing whether or not air transport has advanced sufficiently to warrant starting such work. Very often experimental or research work cannot be made, and when it is started it becomes very expensive.

Navy Airplane Contracts

The Navy Department has recently awarded contracts for building 45 new aircraft and 100 emergency and 100 emergency. The contracts are as follows:

Contract No. 1	100 planes	\$ 1,000,000
Contract No. 2	100 planes	11,000
Contract No. 3	100 planes	11,000
Contract No. 4	100 planes	11,000
Contract No. 5	100 planes	11,000
Contract No. 6	100 planes	11,000
Contract No. 7	100 planes	11,000
Contract No. 8	100 planes	11,000
Contract No. 9	100 planes	11,000
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Contract No. 100	100 planes	11,000

Vernoy's Operating Record

The report of the Joint operations on the sea and land from Edo, New in Paris, West, contains some interesting operating figures. Charles F. Vernoy, master of the Vernoy, a service ship, has been in the service since 1908, and has a record of 302,000 miles with an average fuel consumption of 100 miles per hour.

The service airplanes which are used by the service are equipped with a Wright Whetstone engine. The average running speed of the engine was 1000 rpm with a gasoline consumption of 302.02 gal per hour and an oil consumption of 1.9 quarts per hour.

The Laird Commercial

A Three-Seater Commercial and Touring Type Fitted With Either the OX-5, the C-6, or the W Hurland Engine.

THE LAIRD Commercial plane is a three-seater tractor bi-plane of medium power, designed for general commercial and flying, passenger touring, or border line transport service. The plane is powered with either the 180 hp Wright Whetstone, the 168 hp Curtiss O-5 or the 200 hp Curtiss O-5X engine.

The general design throughout is simple and rugged. It is evident that particular attention has been paid to primary structural requirements such as safety, economy, maneuverability, and ease of maintenance. Strong fabric covers to service requirements and a load factor at eight has been carried throughout the structure.

The maximum of comfort and movement has been con-

sidered in the requirements of maximum head resistance to the greatest extent.

The landing gear is of steel construction for the wood construction. Excellent shock absorbers are fitted and the wheel tread is wide. The design of the landing gear attachment to the fuselage is such that either a spire or normal type of axle may be fitted.

The tail is of a multiple steel leaf, curved to relieve the shock stress on the fuselage when landing on a curve. The use of rubber shock absorbers in the tail skid is entirely eliminated.

The wings are of conventional design, built entirely of spruce, with laminated spruce bars. Rich laminated air-



Last plane fitted with Curtiss C-6 engine

fully considered for both passengers and pilot. The last top fuselage and carefully designed landing points allow access to the cockpit, while allowing excellent wind and another protection. The cockpit is large and comfortable, with plenty of leg and arm room, and, for extra security, flying there is a compartment with ample room for baggage. Both cockpits are fitted with leather, thus having been carried through the two forward fuselages to the pilot's seat. The seats are very comfortable and well upholstered. Steps are fitted to enable easy entrance to the cockpit and walk outside while being arranged on the lower wings.

The landing structure of the Laird Commercial is built of Douglas fir and each wheel station is fitted with steel shock springs, with springs to re-arrange the control and horizontal strut members, as well as to permit the linkage of the wing bracket. The forward portion of the fuselage is braced with 3/16 in. steel cable ends with bars from the pilot's seat to the wingpost. The forward of light upper struts, the fuselage being carried through to the tail.

The engine mounting is built of steel tubing and a detachable from the fuselage. It is very light in construction but extremely rigid and strong in itself. The engine exhaust side is fitted with manifold with a view to adequate alignment. The engine working is well streamlined and con-

sidered from between both halves, forming a very strong box wing. The ribs are of reinforced plywood, with spruce wing struts. The compression web is solid, and the trailing edge is of 1/4 in. steel tubing. The internal bracing is of No. 8 steel bar. All struts are of angle iron, and carefully designed. There are no bolts running vertically through the spars.

Address of struts are on the upper wings only. The central cable, run through the lower wings and the pulleys can be seen through transparent inspection aids. All wing and center section struts are of standard steel tubing. Wing struts, both, front, rear, and main, are made of steel tubing with the surface or completely laminated.

The tail struts are entirely of welded steel tubing. There are two separate double control rods, both being completely braced in the fuselage and in. The horizontal stabilizer is supported and may be changed at will by the pilot during flight. This is accomplished by means of a control lever mounted on a quadrant in the pilot's cockpit, with positive locks to hold it in the desired position. The control line is secured in the process to compensate for some reason.

The general details of the Laird Commercial plane are given herewith for the three engine installations. In the absence of official flight tests, the manufacturer's figures of

Side Steps

By ROBERT H. GORDON

The reported discovery in Germany of a gasoline substitute fuel, which has about twenty per cent greater efficiency than gasoline but is lighter than air, is interesting from an aeronautical point of view. The newspaper account of a possible future aviation night vision—"The airplane was left on the field today, loaded with fuel and headed away before the mechanics had a chance to fix it down." Such a fact might make an interesting one of the time-honored joke about the aviator having to be lured down to the ground when his engine stopped.

Speaking of the lighter-than-air fuel reminds us of the statement of a polymathic friend of mine that, on a conservative estimate, half of the discoveries in the world have been in use but about a potent application covering the placing of gas in airplanes weighs for greater lift. He claimed that the greatest law of a potent aircraft discovery was the scheme for covering a thread in the field of an envelope so that and could be opened more easily, but that the gas-in-wings sheet was in any event in portentious disregard. In a recently published book in the magazine, credited to a former aeronautical officer and writer, this statement in the next future a gas would be discovered right handed three light than air, which would enable the present results of the use to lift themselves into the air. In the book page, and while this problem seems to be right handed three lighter than air in other elements, but if he meant one right hand of the weight of air, why does he stop there? Why not have the space in these air vessels, "lighter" than air—a perfect vacuum, and we have the fact that would go toward lifting them out of the water?

The suggestion that light gas under pressure gives proof of greater lift seems to be quite prevalent among inventors too. The only truth which seems to have been developed in the suggestion is that the more gas under pressure there is in the container the lighter the thing is.

Having recently watched a couple of men in the operation of a vacuum pump, a complete set of connecting rod and men hear on a vacuum pump engine, we are wondering what it must be like in the future where those are manufactured. We can imagine great rooms full of vacuum with no need to be heard but low, quiet and continuous vacuum. If we will be content to attend vacuum in the laboratory, and for our fellow men sitting, would what chance the degree of the vacuum in this world will bear?

The official announcement that there will be no further tests this year results the ship which was visiting the Coast about last year and is among the descriptive men exclaimed "Ah ha! The heavy engine of the ship!"

It is possible the ship we observed at Carlin field about the new line pointing out to his wife the big Hauler Pass machine on the river which had recently made three hundred miles an hour.

A friend of mine developed a new agricultural use for the airplane the other day when he landed at a Boston Airport after dark, placing up a nice straight furrow with the tip of his metal propeller. He intended to have a nice plowed right away and promised to come back to estimate and test as soon as he could get better tips made for the blades.

Brindisi-Atbens-Constantinople Air Line

The first airline of the Aegean-Anatolia Aero-Express Lines, which is to serve the Brindisi-Atbens-Constantinople route, arrived recently at Palermo, Sicily.

The airline was a monoplane from both of the Swiss Monocoupe type, and accommodates 10 passengers in addition to a crew of three. It is equipped with two Daimler-Benz engines arranged in tandem, which develop 500 hp. The

maximum speed is about 314 mph.

The journey occupies 3 hr. and 45 min., the airplane leaving Brindisi at 9 a. m. and arriving at Palermo at 12:45 p. m. The journey Rome-Brindisi-Palermo-Constantinople is to be covered in 32 hr. A regular service three times a week is to be started in the end of July. It is anticipated in Greece that the Brindisi-Constantinople service will be placed on a daily basis later.

Aviation in Hungary in 1925

Connected aviation in Hungary was organized in 1925 by the Aero Express Co., the International Air Transport Co., the Aviation Air Transport Co., and the Hungarian Air Transport Co., which operated the routes Vienna-Budapest and Budapest-Belgrade, together with several non-stop delivery routes between Budapest and the larger cities of Europe.

Regular airlines were operated in 1925 by 13 pilots. These made a total of 1,699 flights over 396,631 km., or 2,480 mi., and carried 5,293 passengers, 1,282 kg. of letters, 21,716 kg. of newspapers, 30,273 kg. of baggage, and 314,641 kg. of



Unmanned and Unmanned Plane.
General Patrick and Staff See of the Division for the better and have shown in it after recently.

weight. During the flights, 45 tonal loadings and one hundred and twenty passengers.

In comparison with 1924, the traffic has 1025 increased by 31 flights, 45,025 km., 451 kg. 5,229 kg. of newspapers carried, 14,413 kg. of baggage and 29,717 kg. of freight, and decreased by 182 passengers and 955 kg. of letters carried.

Aviation Base Established in Chile

An aviation base will be established in El Soler de Buenos about 17 miles East of the port of Antofagasta by the Chilean War Department, according to a statement by the Department of Commerce. The task of organizing the air service in Antofagasta has already been started and also completed will possess all the requirements, including ships, personnel, hangars, and barracks, necessary to the maintenance of an air force.

Thirty-five planes of various kinds, which are now at Antofagasta, will be transferred to El Soler de Buenos. While the service depot is being built generally for aviation planes, it will also be available to sea aircraft.



Invisible Dangers

The motorist, driving his car on solid ground, can see the dangers that lie before him, and can slow down or avoid them. But the dangers which the aviator must face are invisible. Directly in the path of his machine may be cross currents, air holes and vortices. He cannot see them in advance and plan to meet them. He must wait until he feels his plane sway and toss, and then he must depend upon his own skill and the reserve power of his engine to bring him through in safety.

The reserve power of any gasoline engine depends to a great extent upon the quality of the fuel it burns and the oil with which it is lubricated. An engine that is in good mechanical condition, is correctly lubricated and is fueled with a high grade gasoline, is always ready to deliver its full reserve power.

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are products of the highest quality, and can be depended upon to bring out in any plane its reserve power that the engine was built to develop.

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This is the great annual reunion of flying men. Meet your friends at the National Air Races. Learn what others are doing in the air.

Your audience will include all those actively interested in American aviation, official representatives of the National and State governments, foreign missions and citizens from every community in the United States who are visiting the

Sesqui-Centennial

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HOWARD F. WEHLE,
Managing Director,

ROOM 819, ATLANTIC BUILDING,
PHILADELPHIA, PA.



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BEGINNING AUGUST 10th, 1926

SESQUI-CENTENNIAL

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In the Transportation Building on the Exposition Grounds sufficient space has been set aside to accommodate the greatest display of aircraft, accessories and supplies yet attempted in the United States.

ARE YOU INTERESTED? Do you desire to help make this an exhibition worthy of the American aircraft industry and one that will contribute immensely to the development of American aviation? Do you realize the value of having your products exhibited at a show which is bound to be a striking feature of the great international exposition, a patriotic celebration that is daily attracting visitors from every community in the United States? If you are interested, note the following:

This National exhibit is being arranged with the sanction and most active co-operation of the Aeronautical Chamber of Commerce of America, Inc.

Space will be allocated according to priority of applications. In reply please state the number of square feet of space you will require, the class or type of equipment or materials you intend exhibiting, with a complete description of the same.

All exhibits must be delivered by the exhibitor, and placed in the space reserved, not later than August 10th, 1926. It is agreed that they will be permitted to remain until September 15th, 1926, at least. You may start shipping now.

Your application should be filed immediately by mail or telegram, addressed to Howard F. Wehle, Director of Aeronautics, Sesqui-Centennial, Room 819, Atlantic Building, Philadelphia, Pa.

SESQUI-CENTENNIAL EXHIBITION ASSOCIATION

DEPARTMENT OF AERONAUTICS,
HOWARD F. WEHLE,
Director.



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Fireworks Ignite Waco at 5,000 ft.

William Williams and John Mathews have joined the Caterpillar Club in rather spectacular fashion. They were putting on a night fireworks display for the Fourth of July over Nashville, Tenn., when the same unexpected reason the display which was stored in the front cockpit became suddenly ignited. The two aviators were flying a Waco and were at an altitude of about 5,000 ft. when the incendiary tank plane Mathews was in the front seat had already set off the contents of the display. When the fire started he could not immediately work loose from the wires from which the display was hung and as a result he was badly burned before he was able to jump. Williams who was in the rear seat jumped almost immediately and was not burned. Both parachutes opened normally and the men made safe landings. The plane itself crashed dead at great speed appearing like a great flaming meteor and finally bursted to the ground but fortunately, did no one.

Golden Field, Fort Mill, S.C.

Paul Thompson, the Swallow agent, has sold two planes, one to himself with an OX engine and one to Albert Clark with a Dwyer Rhone engine. To Mr. Thompson and Clark made the trip back from Wichita with R. Clark, who is a licensee at the postoffice, was so disappointed with his own that he went out the next night after he got back and drove his Cadillac into a stone wall. He said he couldn't fly very well but he knew what an automobile could do.

Vicars at the field recently include Cy Caldwell in a Travel Air, George Adams in a Stearman, Lloyd Tye in a Waco, George Davis in a Waco, and Captain Thompson and Kelly in a D.H. from McColl Field. All got over the horizon safely.

Edith Reynolds has sold his famous new folding parcel type biplane to Johnny Cowell. The consideration has not been made public but reason is astronomical either way there are considerations. Cowell flew it to Charlotte where he

will add it to his list of Jennies and de passenger carrying, twin-Motors demonstration and intermediate surveys with it. Mrs. Byrnes went up to the buyers for a ride and upon taking the stall vacant was nearly backfired at the last of her trip. But she quickly fired her engine and immediately ordered a new Waco from Lloyd Tye. Tye from the Waco down from Troy last week and delivered it to her, complete with nearly new.

Paul Thompson made a trip to Marshall City in his Swallow recently. Paul's story is good as yet he has received no confirmation from the ground so his destination is withheld. Paul landed on the National Guard rule over there and says it is a very good field so long as the soldiers aren't using it.

Ames, Iowa, News

Cy Caldwell who for fifteen years has operated a shop at Houston in Ames, and who was a Marine Corps pilot during the War, and his brother William, also a pilot, have organized the Caldwell Aeronautical Corp.

An airport from which the Caldwell Company will operate and which will be available also as practically an Ames airport, has been leased from the Ames-Canning Company, one mile east of Ames on the Lincoln and Jefferson highways. Ames now available is 150 acres. On this, an all-steel T-shaped runway, the front part 20 by 50 ft., and the rear part 10 by 30 ft., has been constructed. Other hangars to accommodate planes that are to be placed to add later are projected. Part of the area is to be reserved for parking open and planes. Beginning markers are to be placed on the field with wind sock, ground wind speed indicator, and other devices.

Caldwell has purchased a Travel Air engine made nine place which carries four people in the cabin besides the pilot. The plane was built from Wabbits, Kansas to Ames, Iowa, a distance of 560 miles, in 4 hr. 22 min., by Walter Beek, president of Travel Air. In spite of rain and bad storms, the plane behaved perfectly.

SUPER RHONE

FIXED
RADIAL
AIRCOOLED
COMMERCIAL
AIRCRAFT
ENGINE



120hp
340 lbs.
1400 Rpm

6 1/2 to 10 gal. gasoline 3/4 to 1 gallon mineral oil per hour.
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SUPER RHONE ENGINE & FLYING CO.
PO BOX 153 HOUSTON, TEX.

Bring Your Own Parachute to School

The War Department has requested the Navy Department that the officers of the Navy and Marine Corps, who are to attend the Army Air Service Training School at Langley Field, Va., during the school year 1926-27, bring their own parachutes when they report for duty as cadets. This is desired in order that they may be no interruption in the training due to lack of parachutes.

Third Attack Group to Move to Galveston, Texas

The War Department has authorized the transfer of the 3rd Attack Group of the Army Air Service from its present station at Kelly Field, San Antonio, Texas, to Fort Crockett, near Galveston, Texas. This transfer has been found necessary in order to relieve congestion at Kelly Field where the Air Service Advanced Flying School is located. The change in station will also permit of more effective training of the 3rd Attack Group in air tactics and in cooperation with other branches of the service. The nature of the terrain in the vicinity of Galveston offers excellent opportunity for machine gun and bombing practice. Each plane of the Attack Group is equipped with six machine guns and a number of light bombs. The movement of the planes and many of the officers and enlisted men will be made by air. The remainder of the personnel will be transported by rail to Galveston.

Fort Crockett is now occupied by the deactivated 3rd Infantry, 13th Coast Artillery (2 officers, 25 men), and small detachments of the Medical, Finance, Ordnance and Quartermaster branches of the Army.

The Third Attack Group is preparing to move to Fort Crockett and twelve men have been sent there by aircraft tonight to prepare beds to take care of the personnel.

Maj. Frank D. Leistikow, formerly in command of the San Antonio Air Intermediate Depot, Houston Field, Texas, re-



Recent Photo
Activity at night at Marine Corps Headquarters, San Antonio, Texas

ported for duty at Kelly Field on June 25th and assumed command of the 3rd Attack Group. He is much pleased and interested in his new command and promises great things for the Attack Group and the development of attack aviation.

First Lieut. J. O. Mooreman, A.S., A.S. Rep. Det., McCook Field, returned from present assignment, and will report to Gen. O.E.

Capt. Carl C. Curry, Capt. Dept., detached in A.S. Captain Terry is released from assignment and duty, Washington, and will proceed to Houston Field, reporting to Gen. A.S. From The 3rd.

Sen. Louis Joseph Overend Hephson, A.S. Det., Brooklyn, to attend duty at Kelly Field, reporting in station during July 4.

Maj. Elmer B. S. Barrett, A.S., Kelly Field, to Cook Field.

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